ABSTRACT OF THE DISCLOSURE

A dequantization block is provided for performing dequantization calculations on a block of encoded video signal data using a modified standard quantization matrix. The modified standard quantization matrix is a product of a standard quantization matrix and a diagonal cosine matrix. The dequantization block receives a modified standard quantization matrix, the modified standard quantization matrix being a product of a standard quantization matrix corresponding to the encoded video data stream and a diagonal cosine matrix. In addition the dequantization block receives a scale representing a compression ratio of the encoded video data stream and non-zero IDCT coefficient matrix corresponding to a block of the encoded video data. The dequantization block then multiplies the scale, the non-zero IDCT coefficient matrix and the modified standard quantization matrix. An IDCT block is provided for performing IDCT calculations on each block processed by the dequantization block. The IDCT block then performs IDCT column and row calculations on the dequantization video signal data using a pipelining technique.